

**Protocol
for
Incidental Take Authorization**

Swamp Metalmark Butterfly, *Calephelis mutica* (McAlpine)

Note

If carrying out a given protocol is not feasible, or multiple listed species in a given management area pose conflicts, contact the Bureau of Endangered Resources at 608/264-6057. Staff in BER will work with Integrated Science Services (Research) staff, species experts and managers to establish an acceptable protocol for a given site that will allow for incidental take without further legal Consultation or public notice

I. Species Background Information

A. Status

State status: Endangered.

USFWS Region 3 Species of Management Concern: No.

Number of Known Sites in Wisconsin: Five populations were confirmed in 1999 including one reintroduction in Ozaukee County and a new site on private property in Marinette County. The remaining 3 populations are in Washington, Fond du Lac, and Marquette counties; only 2 are found on state lands.

Global Range: This species is reported as rare to endangered throughout its range, which includes Michigan, Ohio, Indiana, Kentucky (one record), Illinois, Wisconsin, Arkansas and Missouri.

B. Habitat

Larval Host plant: Swamp thistle (*Cirsium muticum*). Eggs are deposited directly on the leaves of the non-flowering plants. In autumn, these plants produce smaller rounded leaves somewhat appressed to the ground (basal rosettes). The plants remain green over winter, and bloom in mid-to-late summer of the second or third growing season.

General Habitat Description: Alkaline wetlands – fens and wet meadows.

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Critical habitat features: Areas with open, low vegetation with an abundance of the larval food plant and suitable nectar plants. Nectar plants include mountain mint (*Pycnanthemum* sp.), black-eyed susan (*Rudbeckia hirta*), swamp milkweed (*Asclepias incarnata*), shrubby cinquefoil (*Potentilla fruticosa*), *Spiraea* spp., and yarrow (*Achillea millefolium*).

Over-wintering habitat: same as above.

C. Life History

Number of generations per year: One.

Over-wintering stage: Partially grown larva (5-6 mm in length).

Over-wintering location: Ventral surface of larval host plant leaves, often along a midrib near the base of the plant rosette.

Adult Flight Period/Adults Active: The peak flight period is usually in late July but collection records range from late June into mid August. Depending on the size of the population, the flight period may last 2-3 weeks, although most individuals probably live for only a few days.

Single-Season Dispersal Ability: Unrecorded. Populations are highly localized. Flights tend to be short in duration, weak and close to the ground; males perch and wait for females; observed dispersal is low.

Immature Seasonal Activity: Larvae generally remain on the host plant from the time they emerge from their egg case (July/August) until close to the time they pupate (June/July of the following year). Larvae rest along the leaf veins, midrib or at the base of the plant when not feeding. Feeding occurs during the day but larvae avoid direct sunlight, staying on the ventral or shaded leaf surfaces. Pupation occurs off of the host plant in the leaf litter.

II. Management Protocol For Authorized Incidental Take

If the management activity is for the purpose of recovering, maintaining or improving the grassland, prairie or savanna ecosystem that includes habitat for swamp metalmarks, then incidental take is allowed if these conditions are followed:

1. If screening indicates that swamp metalmarks may be present on the management area (e.g. observed within the Section or surrounding Sections to be extant within the past 15 years; and suitable habitat, larval host plants and adult nectar plants are available), then pre-treatment presence/absence surveys

must be conducted over a minimum of 2 flight seasons by personnel with the expertise to identify swamp metalmark adults and larvae. Post-treatment presence/absence surveys must also be conducted.

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2. If multiple surveys indicate that swamp metalmarks are not present within the management area, then there are no restrictions on the activity.
3. Given the rarity of this species, if swamp metalmarks are found to be present within the management area or near enough to allow dispersal to a potential site within the management area, then *Department staff should contact the Bureau of Endangered Resources (BER) at 608/264-6057. Currently only 2 populations are known on state lands in Fond du Lac and Marquette Counties.*

Staff in BER will work with managers and species experts to determine the best course of action for a given site. The population level and portions of the management area that are critical to avoid jeopardizing the recovery of the species must be determined, and depending on the circumstances at the given site, incidental take may be allowed under the following conditions:

- A. **Burning:** Use of fire requires consultation with BER.
- B. **Mowing/Haying:** Consult with BER re: type of equipment to be used. No more than 20% of the site may be mowed annually. Mowing at a height of 6-8" in late autumn or spring when host plants are small and metalmark larvae are close to ground level is preferable since specific mowing protocols have not been tested.
- C. **Selective Brush/Tree-cutting:** Consult with BER re: type of equipment to be used and extent of vegetation to be cut. (Benefit of some tree cover/edge effect has not been determined yet.) Host plants must not be buried under cut materials.
- D. **Grazing:** Grazing must not be applied within the site.
- E. **Herbicide Use:** Appropriate herbicides may be used for spot treatment of woody growth but contact with swamp metalmark larval host plants and adult nectar plants must be avoided.

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Survey Protocol

For Presence /Absence Surveys or to determine extent of the population site:

Surveys must be conducted by personnel with the expertise to identify swamp metalmark adults, immatures, and host plants. Survey at least 20 minutes per acre of habitat, and over a minimum of two flight seasons.

Adults: Presence of swamp metalmark adults can be assessed by conducting 2-3 surveys during the peak flight period. Surveys must be conducted under appropriate flight conditions (contact BER at 608-264-6057).

Larvae: Search for swamp metalmark larvae in late summer (August through September) and spring (May through early June) when larvae will be at least 3 mm in length. Examine non-flowering host plants for characteristic feeding damage and locate any metalmark larvae present. Host plants should *not* be searched in late autumn through winter when the turgidity of the leaves is so high that they are likely to break off when examined.

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Definitions

Definition of “Site” for swamp metalmarks: The habitat supporting swamp thistle and nectar plants that could be utilized by a swamp metalmark population for reproduction and feeding. “Site” will refer to habitat within a given property ownership, or across ownerships where survey and management agreements for the species are in place.